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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,930	11/30/2000	Sameer Tannous	95-451	2861

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EXAMINER

KLINGER, SCOTT M

ART UNIT PAPER NUMBER

2153

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application of proceeding.

Office Action Summary

Application No.

09/725,930

Applicant(s)

TANNOUS, SAMEER

Examiner

Scott M. Klinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-39 are pending.

Priority

No claim for priority has been made. The effective filing date for subject matter in the application is 30 November 2000.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-11, 18, 20-29, 31-39 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification of the instant application describes a system that promiscuously detects incoming frames and processing them based on the destination IP address, thereby allowing for the emulation of a large number of IP devices: *"The method begins in step 40, where the network interface 22 receives from the network 10 an IP frame 18 having a destination IP address that differs from the prescribed assigned IP address of the emulator 16. ... the identifying emulation application 26 generates an IP source address (SA) having a value corresponding to the IP destination address (DA) in the detected IP frame 18; the identifying emulation application 26 also generates an IP destination address (DA) having a value corresponding to the IP source address in the detected IP frame 18. After generating the IP header, the identifying emulation application 26 sends the IP frame in step 52 to the raw socket 28c."* (Instant application, page 6, line 22 – page 7, line 7)

In contrast, claims 2-11, 18, 20-29, and 31-39 describe a system that detects and passes incoming frames based on an IP source address. If this is the case, the system will not operate as

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intended. If frames get sent to an application based on the source address rather than the destination address, then (for example) all of the frames that come from one proxy server will get sent to the same application, generating undesired results. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thalheimer et al. (U.S. Patent Number, 5,996,016, hereinafter "Thalheimer") in view of Mogul ("",). Thalheimer shows reinitiation of bind calls for IP applications concurrently executing with alternate address. Thalheimer shows,

In referring to claims 1, 19, and 30, Thalheimer shows substantial features of the claimed invention including:

- Detecting IP frames on a network interface; generating, for each corresponding detected IP frame, a response IP frame by an executable emulation application; outputting each said response IP frame onto the network interface:

"By binding applications to unique address/port pairs a number of TCP/IP applications, such as SNMP network management applications, can be utilized on a single processing system. Thus, the need for dedicated hardware and a network interface for each IP application can be avoided through use of the present invention.

By using the address aliasing feature of many TCP/IP implementations, the present invention allows for any number of IP applications to be associated with a single network

interface." (Thalheimer, col. 2, lines 37-46); a single processing system that uses a single network interface and multiple IP addresses inherently implies detecting incoming frames generating responses and sending them out on the interface.

However, Thalheimer is silent as to how incoming frames are detected and how response frames are sent. Thalheimer does not explicitly show promiscuously detecting the IP frames and outputting each response IP frame by a raw socket. Nonetheless these features are well known in the art and would have been an obvious implementations of the system disclosed by Thalheimer as evidenced by Mogul.

The advantages of implementing the system of Thalheimer with commercial off the shelf (COTS) hardware include keeping the cost of the system at a low point and being able to use existing systems. In order for a single system to receive packets for multiple IP addresses on a single COTS interface it would need to detect incoming packets in a promiscuous mode. In order for the system to reply to packets that were detected in a promiscuous mode it would be necessary to output responses by a raw socket onto the interface.

Mogul shows that network interfaces need to be put into a promiscuous mode to receive all of the packets on the network: "*Normally, a network interface provides only packets destined to its own host so as not to overload the workstation with useless packet interrupts. Many LAN interfaces, however, can be put into a "promiscuous mode" in which every packet on the network is passed to the host software. Since this is not the normal mode, the kernel must provide a means for a monitoring program to select it.*" (Mogul, page 254, section 2)

A person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing of Thalheimer so as to promiscuously detect the IP frames and output each response IP frame by a raw socket, as taught by Mogul, in order to use COTS hardware.

In referring to claims 2-11, 20-29, and 31-39, as understood, Thalheimer shows a system that passes incoming packets to different applications depending on the destination IP address, and responding to said packets, using the incoming packet destination address as the outgoing packet

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source address. The generation of the proper packet headers is inherently implied in a system that sends and receives packets on a TCP/IP network.

In referring to claim 12, Thalheimer shows substantial features of the claimed invention including:

- A network interface configured for receiving IP frames from a network; an executable emulation application configured for detecting the IP frames received by the network interface; The executable emulation application configured for generating a response IP frame for each corresponding detected IP frame having a corresponding identified application request, independent of the corresponding IP source address within the detected IP frame; and outputting the response IP frame to the network interface for transmission on the network: *Thalheimer, col. 2, lines 37-46* (see full quote above); a single processing system that uses a single network interface and multiple IP addresses inherently implies detecting incoming frames generating responses and sending them out on the interface.
- Each received IP frame having a corresponding IP source address and a corresponding IP destination address:

IP frames have source addresses and destination addresses by definition

However, Thalheimer is silent as to how incoming frames are detected and how response frames are sent. Thalheimer does not explicitly show promiscuously detecting the IP frames and outputting each response IP frame by a raw socket. Nonetheless these features are well known in the art and would have been an obvious implementations of the system disclosed by Thalheimer as evidenced by Mogul.

The advantages of implementing the system of Thalheimer with commercial off the shelf (COTS) hardware include keeping the cost of the system at a low point and being able to use existing systems. In order for a single system to receive packets for multiple IP addresses on a single COTS interface it would need to detect incoming packets in a promiscuous mode. In order for the system to reply to packets that were detected in a promiscuous mode it would be necessary to output responses by a raw socket onto the interface.

Mogul shows that network interfaces need to be put into a promiscuous mode to receive all of the packets on the network: *Mogul, page 254, section 2* (see full quote above)

A person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing of Thalheimer so as to promiscuously detect the IP frames and output each response IP frame by a raw socket, as taught by Mogul, in order to use COTS hardware.

In referring to claim 13, Thalheimer shows,

- A kernel configured for detecting IP frames based on the corresponding IP destination address matching a prescribed assigned IP address:

Thalheimer Fig. 4 shows a single processing system 20 that emulates a network with multiple IP addresses, the system detects frames based on IP destination addresses

- The kernel configured for passing the detected IP frames having IP source addresses different from the prescribed assigned IP address:

The source address of incoming packets will be different then the assigned IP address of the destination

In referring to claim 14, Thalheimer shows,

- The executable emulation application is configured for generating the response IP frame by generating a response IP source address and a response IP destination address, the response IP source address having a value matching the IP destination address of the corresponding detected IP frame, and the response IP destination address having a value matching the IP source address of the corresponding detected IP frame:

Thalheimer Fig. 4 shows a single processing system 20 that emulates a network with multiple IP addresses, response frames have the incoming frame source address as the destination address and the incoming frame destination address as the source address

In referring to claim 15, Thalheimer shows,

- The executable emulation application is further configured for generating application response data based on parsed application request data within the corresponding detected IP frame:

A system that emulates a number of IP nodes each running an application (Fig. 3, 22a) inherently implies generating responses to application requests

In referring to claim 16, although Thalheimer shows substantial features of the claimed invention, Thalheimer does not show one of the applications is a web server. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Thalheimer.

Thalheimer states *"While the present invention is illustrated herein with reference to four TCP/IP applications, as will be appreciated by those of skill in the art, any number of applications may be utilized."* (Thalheimer, col. 3, lines 56-59). A person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Thalheimer so as to use a web server as one of the applications, in order to test a web server on a network, without physically replicating the network under test.

In referring to claim 17, Thalheimer shows,

- The executable emulation application generates layer 4 header information for the response IP frame:

Generating header information is inherently implied in a system that sends and receives frames on a TCP/IP network

In referring to claim 18, as understood, Thalheimer shows,

- A plurality of available executable emulation applications, each configured for generating a corresponding response IP frame for said each corresponding detected IP frame based on the corresponding identified application request, independent of the corresponding IP

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destination addresses within the detected IP frame, wherein the response IP frame for each corresponding detected IP frame is generated by a corresponding one of the available executable emulation applications:

Thalheimer, Fig. 1 shows applications 22a-d that are bound to different IP addresses, sending and receiving packets as if they were separate IP devices.

Conclusion

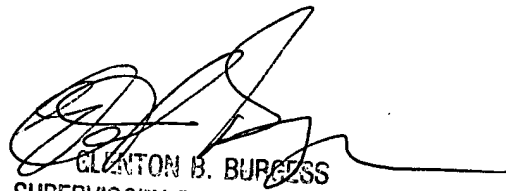
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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